

CITY OF CHULA VISTA FACILITY UPGRADES TO INCREASE ENERGY & WATER EFFICIENCY

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Public Works Dept, Conservation Section



WHY CARE ABOUT ENERGY (& WATER)?



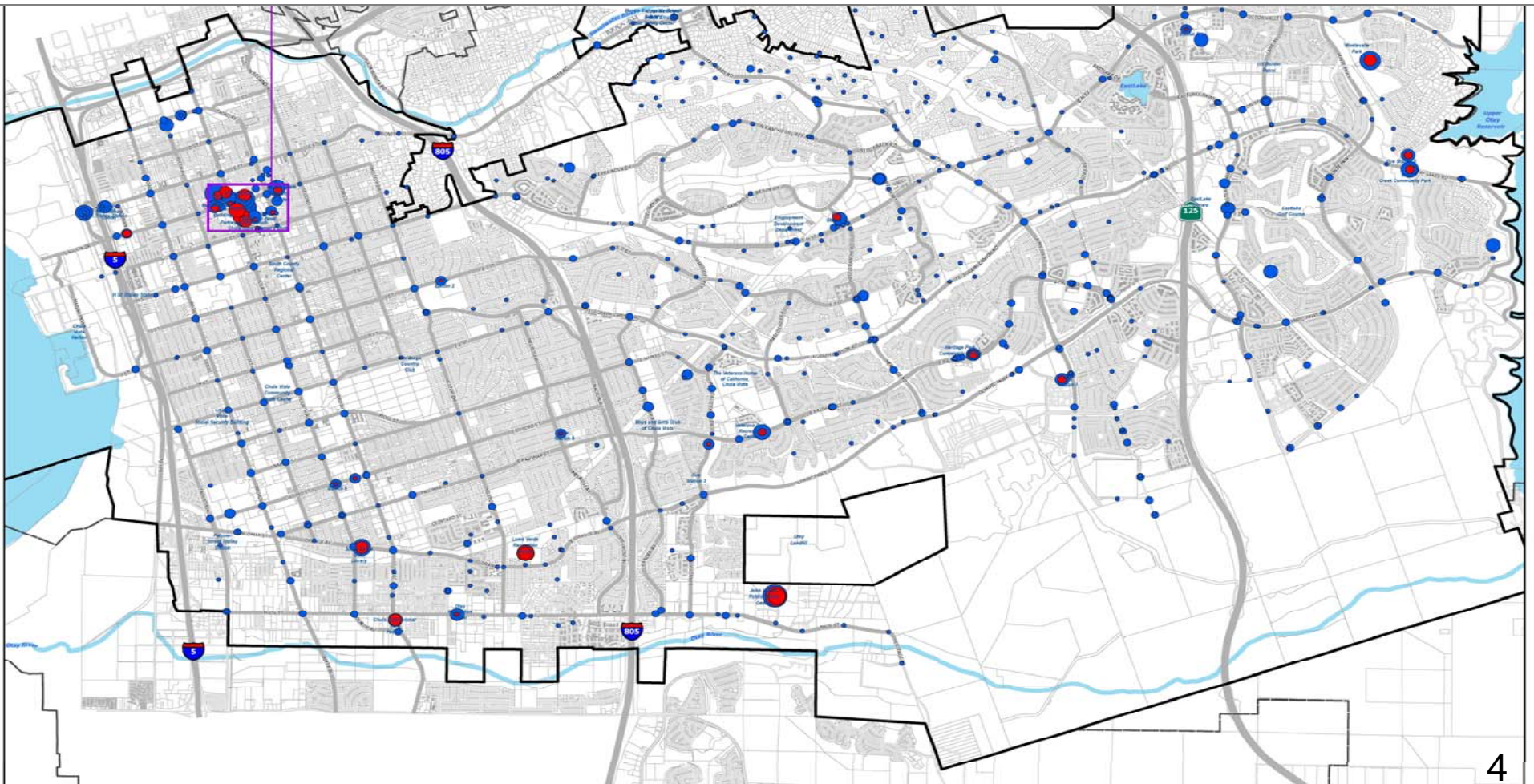
**SHOULDN'T WE JUST PUT SOLAR
PANELS EVERYWHERE?**



IT'S COMPLICATED!!!

MUNICIPAL ENERGY MANAGEMENT - Case Study

- Energy use - 20 million kWh & 1 million therms
- \$6 million in annual utility costs
- 700+ energy utility meters



MUNICIPAL ENERGY MANAGEMENT

- Track energy use & demand
- EPA Portfolio Manager

Benchmark energy/water performance

ENERGY STAR Building Certification (≥ 75 score)

PORTFOLIO MANAGER

Home > My Portfolio > ABC Elementary

Facility Summary: ABC Elementary

Building ID: 1324428

Level of Access: Building Data Administrator

Electric Distribution Utility: City of Ocala (change)

Regional Power Grid: FRCC All

Select my Power Generation Plan to calculate my electric emissions rate

Electric Emissions Rate (kgCO₂e/MBtu): 168.9 (what is this?)

Generate a Statement of Energy Performance for uses other than applying for the ENERGY STAR.

Facility Performance Set Baseline Period | Set Energy Performance Target

Select View: LEED-EBOM Create View | Edit View

12 Months Ending	Current Rating (1-100)	Current Energy Period Ending Date	Current Site Energy Intensity (kBtu/Sq. Ft.)	Total Floor Space (Sq. Ft.)	Current Total Site Energy Use (kBtu)	Baseline Energy Period Ending Date	Current Total GHG Emissions (MtCO ₂ e)
December 2006 (Current)	47	12/31/2006	46.7	50,000	2,333,817.42	12/31/2006	381.32
Select Date							

Change

REFRESH VIEW

General Information Edit

Address: 1234 Studios Lane
Ocala, FL 34471

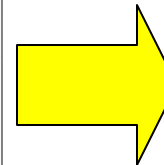
Year Built: 2000

Property Type: Single Facility

Baseline Rating: 47 Current Rating: 47

Eligibility for the ENERGY STAR

Not Eligible: Rating must be 75 or above



OMB No. 2060-0347

STATEMENT OF ENERGY PERFORMANCE
Office Sample Facility

Building ID: 1678964
For 12-month Period Ending: May 31, 2009
Date SEP becomes ineligible: September 28, 2009
Date SEP Generated: August 27, 2009

Facility
Office Sample Facility
1234 Main Street
Charlotte, NC 28227

Facility Owner
Sample Owner
1500 Test Avenue
Charlotte, NC 28227
555-555-5555

Primary Contact for this Facility
Jane Smith
1500 Test Avenue
Charlotte, NC 28227
555-555-5555
jsmith@jasmith.com

Year Built: 2000
Gross Floor Area (GFA): 53,232

Energy Performance Rating¹ (1-100) 85

Site Energy Use Summary³

Electricity - Grid Purchase (kBtu)	2,288,770
Natural Gas (kBtu) ⁴	1,162,996
Total Energy (kBtu)	3,451,766

Energy Intensity⁵

Site (kBtu/Sq. Ft.)	65
Source (kBtu/Sq. Ft.)	166

Emissions (based on site energy use)

Greenhouse Gas Emissions (MTCO ₂ e/year)	409
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Electric Distribution Utility
Duke Energy Carolinas, LLC

National Average Comparison

National Average Site EUI	102
National Average Source EUI	261
% Difference from National Average Source EUI	-36%
Building Type	Office

Meets Industry Standards⁶ for Indoor Environmental Conditions:

Ventilation for Acceptable Indoor Air Quality	Yes
Acceptable Thermal Environmental Conditions	Yes
Adequate Illumination	Yes

Professional Engineer Stamp

Signature: _____

Professional Engineer
License Number: 00052603
State: NC
John Doe
33 Country Lane
Charlotte, NC 28227
555-555-7788

Notes:

1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Approval of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total energy use. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Natural Gas values are in units of volume (e.g., cubic feet) and are converted to kBtu, with adjustments made for conversion based on facility type.
5. Values represent energy intensity, annualized to a 12-month period.
6. Based on Meeting ASHRAE Standard 55 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and ASHRAE Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 5 hours. Includes the time for entering energy data, PE facility inspection and obtaining the SEP and submitting applications for reducing this level of effort. Star represents (pending OMB control number) to the Owner, Collection Strategies, Owners, U.S. EPA (2007), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

EPA Form 5900-16

Tracking Number: SEP209993279001937182

MUNICIPAL ENERGY MANAGEMENT

- Share results with leaders, employees, & visitors

This program is funded by California utility ratepayers and administered by SDG&E®, under the auspices of the California Public Utilities Commission



Your Community. Your Environment. Your Choice.
www.chulavistaca.gov/clean



CIVIC CENTER LIBRARY
365 F Street
Chula Vista CA 91910

February

-29.462%

March

-13.747%

April

-6.231%

May

-10.514%

June

-8.875%

July

-4.201%

August

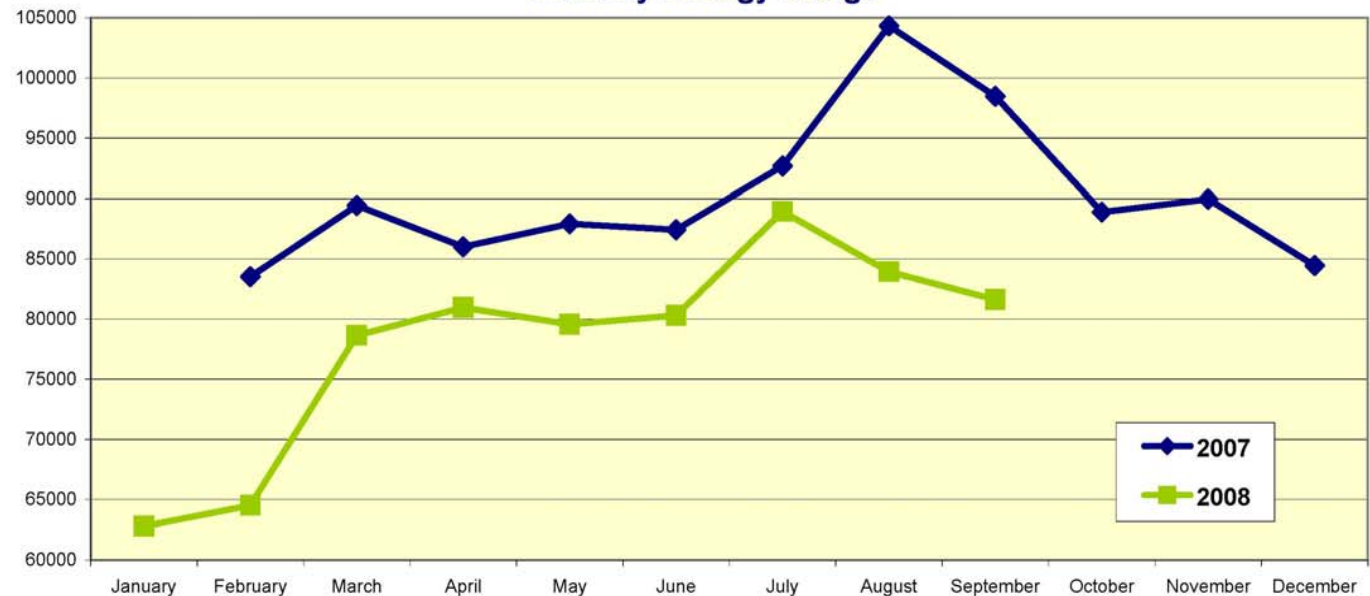
-24.293%

September

-20.649%

Energy (kWh)

Monthly Energy Usage



As of September 2008, 91,336 kWh and \$11,960 in savings
10,000 kWh savings = Carbon Emissions from 882 gallons of gasoline

MUNICIPAL ENERGY MANAGEMENT

- **Energy (or Climate) Action
Plan**

Establish goals

Leadership support

- **Strategies for...**

Employee education

Energy efficiency

Renewable energy

ES appliances

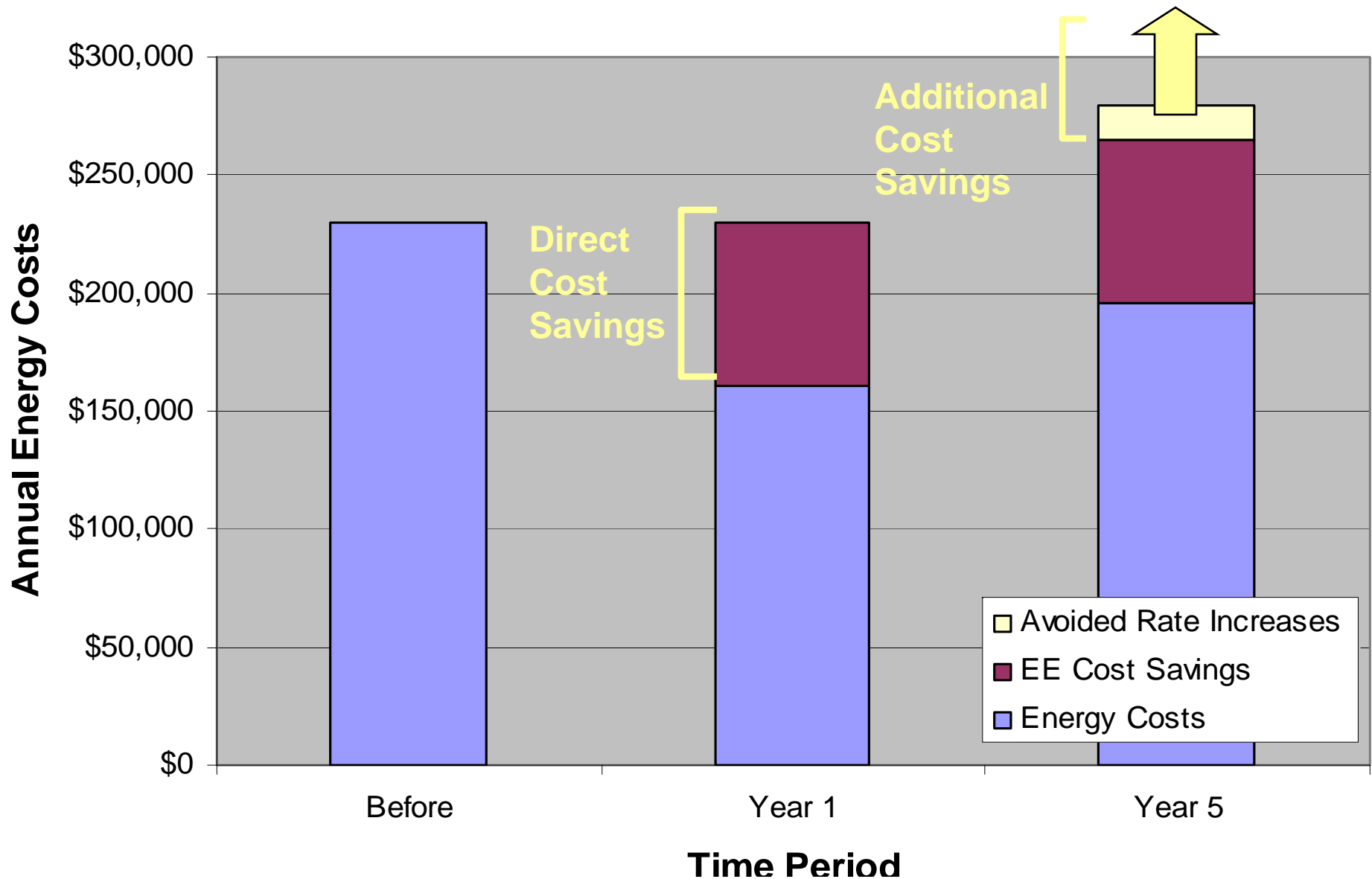
New buildings

Revolving fund



MUNICIPAL ENERGY MANAGEMENT

- Energy Retrofit Projects – Good Investments \$\$\$



NEW POLICE HQ DESIGN



- Designed to exceed Title-24 by 21%
- Incorporates a 35 kW solar PV system
- \$230,000 in avoided energy costs annually

LOMA VERDE POOL RETROFIT



- High-efficiency condensing boiler installed
- Coupled with over 70 solar hot water panels
 - \$35,000 in annual cost savings

LED STREET LIGHT RETROFIT



- **8,300 street lights converted to LED**
 - **2.6 million kWh saved annually**
- **\$492,000 in annual cost savings today**

EVEN SIMPLE PROJECTS CAN SAVE \$\$\$!



- Simple projects can have some of the best ROI
- Vending machine & PC retrofits saved \$21,000/yr
- Simply switching energy tariffs saved \$119,000/yr



THANK YOU!

Brendan Reed

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www.chulavistaca.gov/clean